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PERSONNEL SAFETY WITH CO_2 DISCHARGE

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Manual May Differ From the Original, but the Contents Do Not

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
DENVER, COLORADO

PERSONNEL SAFETY WITH $C0_2$ DISCHARGE

The purpose of this volume is to advise personnel at all facilities of the danger posed by $C0_2$ discharge and to recommend mitigating action.

Many generators at Reclamation powerplants are protected with $C0_2$ discharge systems to limit fire damage. Discharged $C0_2$ is usually confined to the generator air housing, but $C0_2$can escape into other areas of the plant. Because $C0_2$ is heavier than air, it will settle into lower elevations in the plant.

$C0_2$ in sufficient concentration is lethal to humans. A $C0_2$ discharge poses a hazard to workers or visitors located in a turbine pit or other susceptible lower area. Reference FIST volume 5-2 (Firefighting and Fire Protection).

Therefore, an emergency evacuation must take place immediately upon $C0_2$ discharge.

The following steps are recommended as minimum requirements to ensure personnel safety:

1. Alarm systems should be installed to warn employees and visitors of the need to evacuate the affected areas. Where feasible, this system may be combined with other existing plant evacuation alarms, but ***indication of the $C0_2$ discharge itself should activate these alarms.***

2. Both audible and rotating beacon (or strobe type) visual alarms should be used in high noise areas such as the turbine pit. Audible alarm signals to evacuate the affected areas must be unique and clearly distinguishable from other types of alarms, annunciator horns, and "code calls."

3. Plant personnel should be advised of the need to evacuate in the event of $C0_2$ discharge and trained in the proper evacuation procedures.

4. Plant visitors should be advised of the alarm identification and evacuation procedures in the plant.

5. The plant should be reviewed for compliance with appropriate Life Safety Code requirements including paths of egress and ***adequate signage indicating safe exits from all areas of the plant.***

6. Periodic testing of alarms should be conducted in conjunction with evacuation exercises.

7. Plant standard and emergency operating procedures should be reviewed for adequacy in the event of CO_2 discharge.